“Marketing Strategies for Implementation of Digital Economy: A study with reference to select Sectors in Telangana State”.

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1.0 Introduction:

The progress of Mankind since its existence passing through various phases comprising from stone age to metal ages and to the Information technology phase of present living, have witnessed continuous progress and towards simplifying the life style from time to time. However, the present revolution which has led the anthropological advancement is Digitisation. This new phenomenon transformed human lives and propelled the mankind in to Digital Age. Today we witness every walk of life from wakeup call rings from Digital alarm clocks to dialling calls on our mobiles and to the extent to checking blood pressures in sphygmomanometer which are Digital. The present progression in mankind is the result and significantly influenced by the Digital transformation.

The advancement of Technology facilitated the entire economy to run on the device and it has made all the regular day today activities easy, convenient and more efficient. This transformation has paved to grow digital economy. Nicholas Negroponte has used the metaphor of shifting the atoms to being processed in to bits during the end of the Twentieth century. Thus, the concept of Digital Economy has come in to existence based on the Digital Technologies.

Digital technologies have been developed in hordes over the past few decades. Ever since the personal computer was developed in the 1970s, it has paved the way for a flood of new technologies to come into existence. The pace with which the digitisation has overtaken the world is phenomenal. From digital calculators to digital music players to digital cameras, the digital economy has established a firm footing in the world. A digital economy is one where the structural framework of the economy is composed of digital technologies. In this respect there are several sub-economies which can come under the purview of a digital economy. The internet economy is one such example. A great variety of products – be they books, music, healthcare products or retail products – is available through the interlinked digital framework of the internet, creating in itself a compact economy of sorts.

Various aspects of human life such as legal services, medical consultancy, tax returns filings, information related to agriculture and banking can now be addressed through digital media like the internet, tele-conferencing and ATMs. The advantages of a digital economy are evident and vast in number. This has been identified by organisations all over the world, including governments of many developed and developing countries, who have made

conscious efforts to digitise the economy in order to improve the efficiency of tedious governmental processes as well as provide convenience to citizens. E-governance is a fast-developing concept which requires initial establishment of an information and communication technology (ICT) framework. After the parameters have been set in place, fast and efficient governance can reach the beneficiaries, as it removes various levels of unnecessary protocol that might have been required earlier. Thus, the digital economy requires an initial investment in order to set up the framework necessary to sustain these technologies after which they can be utilised efficiently.

The present study is an attempt to understand the levels of Digitalisation in the State of Telangana and measure the perceptions ad attitudes of the Individuals in Adopting the Digital Technologies and the factors influencing the Technology acceptance pertaining to select sectors like Banking and Agriculture sector.

1.1 MEANING AND UNDERSTANDING OF THE CONCEPT DIGITAL ECONOMY &DIGITAL TRANSFORMATION IN INDIA AND TELANGANA

The first Chapter of the Research explores the basic concepts and meaning and understanding of the term Digital Economy. It exclusively discusses the evolution of the Concept Digital Economy and its meaning and definitions given by different authors over a period of time and how it has evolved as phenomena and the kind of transformation the Phenomena is undergoing from time to time. It also clarifies the understanding of the concepts Digitisation, Digitalisation and Digital Transformation as process to shape the Economy as Digital Economy.

The later part of this chapter deals with transformation of Indian Economy towards Digitisation, the rate of Digital Penetration. It also showcases the Digital Infrastructure in Indian Scenario supporting the evidences with statistical data. The study also explores various initiatives taken by the Government towards Digitalisation of the Economy. As the study is mainly focused to select sectors, it tries to explores the thrust areas of Banking and Agriculture with special reference to Telangana State.

2.1 REVIEW OF LITERATURE

Strategies for Implementation of Digital Economy with special reference to Banking and Agriculture Sector are the study under concern. The domain areas of the study confined to Banking and Agriculture sector. In this regard, a systematic and extensive survey is made in collecting reviews related to Digital Banking, E-Agriculture and Digitalisation of Economy as a whole. The reviews are classified under three main categories. The first category the Section one of the literature focuses on reviews related to drivers of Digital economy, factors related to infrastructure, methods, opportunities and challenges in implementation of Digitalisation of Economy. Section two of the literature deals with Digitalisation of Banking sector. In this section, the reviews related to factors influencing adoption of Digital Banking, perceptions of customers in adopting Digital Banking are discussed. The third section of the literature narrates the issues related to Digitalisation of Agricultural Sector. In this section reviews pertaining to factors influencing, opportunities and challenges in the Agriculture Sector are discussed.

The reviews encompass only Banking and Agriculture sectors, explaining gradual progress of the literature in the study. The literature adheres to the subject matter concern and includes different time periods and Geo-Political Boundaries with in the country and foreign nationals for research data. The literature identifies the drivers, models, research gaps and tools used in various research works across the field of study.

The literature review classified under three sections. They are as follows:

SECTION I: Provides the literatures related to drivers of Digitalisation of Economy.

SECTION II: High lights the literature related to Digitalisation of Banking Sectors.

SECTION III: Literature on Digitalisation of Agriculture Sector.

3.1 THEORETICAL BACK GROUND AND CONCEPTUAL FRAME WORK OF THE STUDY

The third Chapter of the Study deals with the theoretical background and the conceptual frame work of the Study to support the Research work carries in the thesis. This first part of this chapter deals with the traditional understanding of the concepts and theories related to Marketing. The study while elaborating these jargons tries to link the present scenario of Digitalisation and how the approaches of the marketers have changed in accordance with the changing customers in this Digital Era of Anthropological advancement.

In this regard the first part of this chapter covers various Marketing concepts postulating the core areas of Marketing Strategy to supplement with sound theoretical insights to implement Digital economy in select sectors under the study. The theories include various Models developed by renowned research scholars in the field of Marketing and Technology. The Marketing Mix frame work and other related aspects of Marketing studies and its literature help us to understand the changing paradigm shifts in the Marketing process in tune with Digital Transformation phase of this 21st century. Analysing 4P's, 4C's and 4A's and their relevance in various contexts; the variables like Availability, Acceptability, Trialability, Affordability and Suitability are drawn to understand level of penetration of Digital Economy. It also gives insights to diffuse technology and convergence of products and services efficiently and effectively by leveraging the value addition delivering to the Customers in emerging subcultures as new segments.

The later part of the chapter deals with the models, which investigates and had empirical evidences in testing the different factors and variables influencing behaviours of the individual in adoption of Technology. The present study on implementation of Digital economy in Banking and Agriculture sector, it mainly focuses on diffusion of Innovation, Technology Acceptance, Behavioural attitudes and social influence to study existing scenario and also understand the perceptions of the individuals testing factors influencing the adoption of Digital Technologies. In this regard, the study keenly observes the variables like PEU, PU, Social Norms (Social Influence), Trust, Perceived Risk, Banking Efficacy, Awareness, Behavioural intention and Attitude etc. are drawn from various models to Test the Perceptions and factor influence on the behaviour Intention of the individuals. Based on the present models we can construct a self-Developed Conceptual framework to study the variables and their relationships to analyse the Marketing Environment to better execute the

Marketing Strategy for better implementation of Technologies towards Digital Economy growth.

4. RESEARCH METHODOLOGY

4.1 Background of the Problem Statement:

The renowned economist Adam Smith's theory of Absolute Advantage has predominantly enjoyed its significance and being practiced by the policymakers of the Countries in producing a Good or Service. Every Nation has sought this Advantage in building and maintaining their Economies by evaluating their Key Sectors and their contribution to the Nation's Economy. Digitalization is one such absolute advantage that world has witnessed in recent years (El-Darwiche, B., Friedrich, R., Koster, A., Sabbagh, K., & Singh, M. 2013). Emergence of Digitalization as new tool is inevitable. Various Economies across the Globe have perceived a rapid change by augmenting new Digital Technologies and Innovations in their key Sectors and which has shown Absolute Advantage in their Economies. In certain Sectors it is claimed as the "Right to Win" and Beat the competition.

Digitalization yields significant economic benefit and leads to substantial social benefits to Societies and Communities at large by enhancing quality of life through productivity. However, the Literature pertaining to Digitalization across the Globe have shown that it not only has absolute advantage of Sectoral growth but has created a vast Digital divide between the nations and within the Economies, among the sectors, societies, communities and the demography's at par. This is all due to uneven distribution of Digital Infrastructure and lack of proper implementation of Digitalization.

4.2 Problem Statement of the Study:

India, as fast emerging Economy, has no exception from this Digital Divide. There exists wide gap among the people, businesses, corporates and sectors at large in accessing and availing the Digital Technologies. There is an acute need to address this lacuna of uneven implementation of Digitalization, which otherwise leads to further chaos among the sectors as well as in demographics (Rao, S. S. 2005). The repercussions of this uneven move will be severe in near future as some sections of the Economy get benefits and others are deprived and the inequalities will increase further more. There is need for Strategic plan to implement

digitalization by understanding and addressing various issues that restrains the individuals from availing the fruits of the Digitalization, which intern reflects on Economy at large. In this context, one has to understand the process of diffusion of Technology and its process to better reach all sections of the societies to avoid uneven distribution of fruits of Technological Innovations towards reaching and implementing Digital Economy.

The concept of diffusion was used by Tarde (1904) as an "imitation" which at present known as "Adoption" (Barry, A., & Thrift, N. 2007). Any adoption is a process by which an innovation is communicated through certain channels over time among the members of the social system, where the social system is a set of interrelated Units engage in joint problem solving to accomplish the common goal (Rogers, 1962). Similarly, Diffusion is the process by which a technology spreads across a population of Organization (Fichman, 2000). As the Units of social groups differ in their behaviour based on their Homo and Homophily, the diffusion of Technology and the rate of adoption also vary. The perceived attributes like complexity, trial ability, observability. relative advantage and compatibility of the Technology influence the rate of adoption (Roger, 1962). Apart from the foresaid attributes the studies also emphasize that factors like Accessibility, requirement of product, individuals' abilities, interests of the Individuals, Education levels, skills, Age groups, nature of the Individual use of technology and composition of the Products do influence any technology to be adopted or to be rejected (Riesenberg, L. E., &Gor, C. O. 1989, Attewell, P. 1992).

Referring the same to the Indian context, the Consumer profile of the market is very diversified and heterogeneous comprising wide variety of Market Segments. As the Studies reveal manifestation of Advancement in Digital Technologies, ubiquitous internet connectivity and ever-increasing penetration of smartphones as digital revolution, there requires a steady implementation of the same with effective strategies to tackle the flows of implementation that lead to digital divide. So that, the phenomenon of digital transformation and its advantages will reach all sections of the societies.

4.3 Need for the study:

The researcher has selected Fintech Sector, as banks have opened their activities and collaborating with third party services by transforming their traditional banking system and style of function and implementing new technologies in their day today activities (Timmers, P. 1998). This has facilitated individuals as well as markets to take part in direct transaction

for all their financial related activities and leveraging the digital benefit. It has emerged as new sphere of market encompassing all sections of the society inevitability. The second priority sector is Agriculture where the majority of Individual depended on this sector and has low productivity. These Studies also shows the socio-economic divide which is existing among the Agrarian society and are living in rural areas (Singh, S. 2010). This groups of people though vast in majority depend on this sector contributes less to the economy and are deprived of fruits of Technologies when compared to other sectors and are vulnerable.

Hence, the present Study is an attempt to understand and evaluate level of Digital Penetration, and analysis of the factors influencing the adoption of Digital Technologies and its acceptance in select Sectors like Banking which deals with Financial Technologies (FinTech) and Agriculture Sector.

4.4 Objectives of the Study:

1. To Study the present scenario of Digitalisation in Telangana State pertaining to Agriculture and Banking Services.
2. To Study the Availability, Accessibility, Compatibility and Trail ability and Experience of Digitalisation select sectors in Telangana State.
3. To study the factors influencing the perceptions of the Individuals in adopting Digital Technologies across the select sectors of the study.
4. To study the Behavioural Intention in Accepting the Digital Technologies in select Sectors.

4.5 Research Questions of the Study:

The main thrust areas the study attempts to answers are as follows:

1. Are there required Digital Products like Smart Phones, Internet packages, Network coverage, Digital apps available to the customers?
2. Are the Digital channels accessible to the customers at merchant places/ service providers whenever required?
3. Does the customer find any value addition or relative advantage in adopting Technological innovations?
4. Is existing digitalisations suit the customer requirements?

5. Does existing technologies provide the customers to make enough trials before actually adopting it?
6. Are the existing digital technologies users friendly?
7. What are the different factors influencing the behavioural intention of the individuals to opt the technological innovations?
8. Are the financial institutions and Government play instrumental role in promoting Digitalisation?
9. Is there any social influence on individual in adopting digital technologies and innovations?
10. What are the different reasons for under-utilisations of existing Technologies in select sectors, if any?

4.6. Hypotheses:

The following are the main hypotheses statements formulated based on the prime objectives of the Study. These main hypotheses statements are further divided in to sub-hypothesis and are tested based on the demographic variables in the Data analysis for Primary Data collected for the Study.

- $H_{01:}$ There is no significant difference in Availability, Accessibility, Compatibility, Trialability and User Experience of Digital Services with respect to select Sectors in the State of Telangana.

- $H_{02:}$ There is no significant difference perception of the Individuals in factors influencing the customers' behaviour in adoption of Digital products and services in both select sectors in the State of Telangana**.**

- $H_{03:}$ There is no significant difference in Acceptance of Technology in Both select sectors in the State of Telangana.

4.7 Research design formulation:

The researcher has to follow major activities to perform during the research process. The process requires the defining research objectives, selecting the appropriate design, developing the instrument, sampling process, approaches to collect data, inventorying resources and plan for data analysis the trade-off. All this process becomes part of formulation of research design (Bhattacherjee, 2012).

4.8 Research Design:

The blue print for research design adopted for the present study is **Descriptive** and Empirical Research Design. As any study, during its initial stages, requires a prior Knowledge the descriptive method of research design helps in exploring and arriving at systematic conclusions pertaining to the concepts. It also helps in developing theoretical knowledge sequentially to portray the existing scenario in defining the Study Concerned.

The study also broadcasts in to pragmatic evidences to investigate and test the field reality with statistical data to present the logical relationships of the variables under the study. Hence, the research under the study also embraces **Empirical Research Design** to stimulate extant reality of field apprehensive to arrive at logical and valid conclusions with the support of Statistical analysis using Primary and Secondary Sources of collected data evidences.

4.9 Sampling Methods:

In accordance to this study, the researcher has adopted **Area Sampling**, **Convenience and Snowball Sampling** method for primary data collection from the respondents through questionnaire survey.

4.10 Sample Size:

The standard model is used to Determine the Sample size by using the following formula:

Sample size = Z^2 *(p)*(1-p)/C^2

OR

$$n_0 = \frac{Z^2 pq}{e^2}$$

Where,

z = z value (1.96) for 95% confidence level.

p = proportion of the population which has the attribute in question

q = 1-p.

C = confidence interval (e = Margin of Error).

As per the model sample size comes to 384 at 95% confidence level where in confidence interval is 5% considering percentage error @ 50% (the worst case).

Hence the total sample size has been decided 500 each for the (FinTech) Banking sector and Agriculture Sector and **a total of 1000 sample for the Study**. But, for the more accuracy and precision the study includes the respondents more than the sample size determined under the study.

SECTORS UNDER THE STUDY		
	AGRICULTURE SECTOR	**DIGITAL BANKING SERVICES (FINTECH)**
SAMPLE SIZE	811 Respondents	686 Respondents
SEGMENTS	Farmers	345 Urban Respondents 341 Rural Respondents
For each sector -> Sample Size = 10 Districts * 50 Respondents =500 **TOTAL SAMPLE SIZE: 1000** **Actual Sample collected: 1497**		

4.11 Period of the Study:

The period of the study includes last two decades of the 20th century and early start of the 21st Century for collecting Secondary Date for compiling the literature pertaining to Digitalization of Economy. The Secondary data during this period withstands to support in developing the conceptual frame work by analyzing various theories and models which acknowledges the roots into the study for better understanding.

The Primary data is collected through survey method using the questionnaire during the years 2020 & 2021 from various districts of the Telangana State.

4.12 Questionnaire Construct:

The following are the constructs used for developing the Questionnaire for the study. These constructs are arrived based on the literature and the models related to concerned study.

Variable	Definition	Source
Availability	"It refers to the extent the physical availability of Digital Infrastructure like Devices, Network and other outlet facilities".	Self-Developed
Accessibility	"It is Physical accessibility of digital platforms and information Technology and the Hard ware needed to the individuals at required places and the extent of retrieving of information from the system"	Karahanna and Limayem [2000]
Compatibility	"Compatibility is the factor which deals with an	Rogers [1983]

	innovation is said to be consistent and fits the potential adopters' requirements, needs and existing Values"	
Trialability	"It is the factor that explains how an innovation can be experimented before actually one adopts it".	Rogers [1983]
Usability/Experience	"This construct explains the comparison of the system and its outcome experience when one completes the specific task".	Card et al. [1980]
Perceived Usefulness	"PU construct is the belief of individual who thinks that an innovation or use of the system which results in enhanced performance".	Bandura (1982)
Perceived Ease of Use	"PEU is the degree to which an individual believes that use of an innovation or a system is free and requires less effort".	Rogers (1983
Trust	"Trust is the construct which attempts to explain the Customers' trust towards an institution or mechanism (bank or Service Provider) that fulfils its obligations and required legalities in fulfilling the transactions by monitoring and safeguarding the privacy issues of the customers".	Yousuafzai et al, (2005)
Perceived Risk	"Perceived risk is the expectation of the customer where a desired outcome of an innovation would result in loss. It is the subjective expectations that would cause the suffering of loss in attempting a new task".	Greatorex and Mitchell, (1994)
Digital Banking Self Efficacy	"Digital banking efficacy reveals the individual capabilities and their proficiency in using or performing the Digital Banking transactions".	Bandura, (1977); Taylor & Todd, (1995)
Internet Usage Self Efficacy	"Internet Usage Efficacy (IUE) is the capabilities of the Individuals in operating or use of Technologies specially the tasks that can be accomplished using internet in attaining desired set goals".	Hsu & Chiu, (2004)
Subjective Norms	"Social Norms relates to the persons perceptions which are being influenced by his or her close associates. In other words, the persons expected behaviour which his closed and near once expects him to perform".	Fishbein and Ajzen (1975)
Awareness	"Whether the information about a particular innovation or Technology is being intimated timely to the customers regularly or not. It is the communication how well it is passed to the customers".	Self-Developed
Government Support	"This construct deals with the creation of infrastructure or initiatives that are taken by the Government to reach and promote the innovation effectively and efficiently to the customers. It also deals the legal frame work that govt facilitates to	Tan &Teo, (2000)

	influence the positive vibes in promoting the digital technologies.	
Bank Initiatives	"The efforts or initiations taken by the Banking institutions in adopting digital technologies and encouraging their customers to adopt the same for better functionality".	Polatoglu&Ekin, (2001)
Behavioural Intentions	"A person's subjective probability that he/she will perform some behaviour".	Fishbein&Ajzen, (1975)
Attitude	"An attitude is an individual's disposition to respond favourably or unfavourably to an object, person, institution, or event, or to any other discriminable aspect of the individual's world"	Ajzen and Fishbein(1980)

4.13 Statistical tools used for Data Analysis:

For analysing primary data, the researcher has used SPSS software to avail the Statistical tools for Data analysis. For Structural Equation Model AMOS is used for the analysis. The following are the tests used for the analysis. Cronbach's Alpha is used for testing Reliability of the Questionnaire. For Computing the Variables Exploratory Factor analysis is executed along with KMO test of Sampling Adequacy Measure. To test the Normality of the data the Kolmogorov-Smirnov test and the Shapiro-Wilk Test is used.

The researcher has used five-point rating Ordinal scale for the Questionnaire. The Population mean is difficult to measure for the sample. When tested normality of Data the results have shown non-normality. Hence, the researcher has used Non-Parametric Test for the analysis. The Non parametric tests include Mann -Whitney U Test, Kruskal-Wallis test and one sample Kolmogorov -Smirnov test. The SEM analysis is done with the help of AMOS and thresholds for Confirmatory Factor Analysis (CFA) are conducted to fit SEM model. The tests include measuring of Construct validity, Composite Reliability, Discriminant Validity and Multi collinearity for Model fit. These tests are done with the help of Master Validity plugins in AMOS developed by James Gaskin.

5. DATA ANALYSIS

The first part of the Data analysis deals with Technology adoption and acceptance in Banking sector. The descriptive statistics like percentages and valid sum are used to measure the opinions of the respondents and other demographic related measures. The second part of the data analysis deals with Agriculture sector in the Telangana State.

5.1 Demographic Profile of the Respondents under the Study of Banking Sector.

The table below explains the Demographic profile of the respondents for the study conduct on Digital Banking (Fintech) Service in the Telangana State. The demographic variables include the Gender, Age, Educational Qualifications, Employment Status of the Respondents and Area of their residence whether Rural or Urban domicile they belong.

Profile of the Respondents Under the Study					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Gender	Male	461	67.2	67.2	67.2
	Female	225	32.8	32.8	100.0
Education	SSC	47	6.9	6.9	6.9
	Intermediate	76	11.1	11.1	17.9
	Degree	332	48.4	48.4	66.3
	Post-Graduation	198	28.9	28.9	95.2
	Ph.D.	33	4.8	4.8	100.0
Age	Under 20 Years	66	9.6	9.6	9.6
	21 to 30	362	52.8	52.8	62.4
	31 to 40	169	24.6	24.6	87.0
	41 to 50	62	9.0	9.0	96.1
	51 to 60	20	2.9	2.9	99.0
	61+	7	1.0	1.0	100.0
Employment Status	Agriculture	64	9.3	9.3	9.3
	Private Employee	306	44.6	44.6	53.9
	Govt.Employee	81	11.8	11.8	65.7
	Self Employed	74	10.8	10.8	76.5
	Unemployed	152	22.2	22.2	98.7
	Retired	9	1.3	1.3	100.0
Area of Residence	Rural Area	341	49.7	49.7	49.7
	Urban Area	345	50.3	50.3	100.0

5.2 Exploratory Factor Analysis for testing of Present level of Digital Technologies Acceptance in Banking Sector.

5.2.1 Reliability Test:

Coefficient of Reliability	
Cronbach's Alpha	Number of Items considered
.923	17

5.3 Conduct of KMO and Bartlett's Test for Factor Loading:

KMO and Bartlett's Test		
KMO test of Sampling Adequacy Measure		.933
Bartlett's Sphericity Test	Value of Chi-Square	6162.468
	df	153
	Sig.	.000

5.4 Factor loading using Rotated Component Method:

Table Showing Factor loading with Rotated Component Method						Cronbach's Alpha
	Component					
	1	2	3	4	5	
COM2	.823					**0.894** *6 Items*
COM6	.774					
COM3	.716					
COM4	.653					
COM5	.645					
COM1	.578					
TR4		.773				**0.809** *4 Items*
TR3		.768				
TR2		.674				
TR1		.522				
AC3			.770			**0.838** *4 Items*
AC4			.754			
AC1			.620			
AC2			.527			
AV1				.782		**0.713** *2 Items*
AV2				.715		
UE1					.853	**0.640** *2 Items*
UE2					.809	

5.5 Testing of the construct Availability of Digital banking Technologies and infrastructure for implementing Digitalisation in Banking Sector among the overall respondents in the state of Telangana.

5.5.1 $H_{01.1:}$ There is no significant difference in Availability, Accessibility, Compatibility, Trial ability and User Experience of Digital Services in Banking among the Gender Categories.

	Null Hypothesis	Test	Sig.	Decision
1	The opinion of the respondents for the construct Availability of Digital Banking Technologies is the same across the Gender categories.	M-Whitney U Test	.114	Accept

2	The opinion of the respondents for the construct Accessibility of Digital Technologies in Banking remains same across categories of Gender.	M-Whitney U Test	.162	Accept
3	The Construct Compatibility of Digital Banking Technologies is the same across categories of Gender.	M-Whitney U Test	.004	Reject.
4	The Respondents options to make Trialability of Digital Technologies in Banking Sector is same across categories of Gender.	M-Whitney U Test	.918	Accept
5	The User Experience of Digital Banking Technologies of the Respondents is the same across categories of Gender Groups.	M-Whitney U Test	.309	Accept

5.5.2 $H_{01.2:}$ There is no significant difference in Availability, Accessibility, Compatibility, Trialability and User Experience of Digital Services in Banking among the Categories of Education.

	Null Hypothesis	Test	Sig.	Decision
1.	The opinion of the respondents for the construct Availability of Digital Technologies towards Digital Banking is the same across categories of Educational Qualifications.	K-W Test	.000	Reject.
2.	The opinion of the respondents for the construct Accessibility of Digital Banking Technologies is the same across categories of Education.	K-W Test	.000	Reject
3.	The opinion of the respondents towards the construct Compatibility of Digital Banking Services is same across respondents' categories of Education.	K-W Test	.000	Reject
4.	The opinion of the respondents towards the construct Trialability of Digital Banking Technologies is the same across categories of Education.	K-W Test	.009	Reject
5.	The User Experience of the respondents towards Digital Banking services is the same across categories of Education.	K-W Test	.037	Reject.

5.5.3 $H_{01.3:}$ There is no significant difference in Availability, Accessibility, Compatibility, Trial ability and User Experience of Digital Services in Banking among the Categories of Age Groups.

	Null Hypothesis	Test	Sig.	Decision
1	The opinion of the respondents for the construct Availability of Digital Technologies towards Digital Banking is the same across categories of Age Groups.	K-W Test	.000	Reject
2	The opinion of the respondents for the construct Accessibility of Digital Banking Technologies is the same across Age Groups.	K-W Test	.000	Reject
3	The opinion of the respondents towards the construct Compatibility of Digital Banking Services is same across respondents' categories Age Groups.	K-W Test	.000	Reject
4	The opinion of the respondents towards the construct Trialability of Digital Banking Technologies is the same across categories Age Groups.	K-W Test	.002	Reject

5	The User Experience of the respondents towards Digital Banking services is the same across categories Age Groups.	IK-W Test	.019	Reject

5.5.4 H01.4: There is no significant difference in Availability, Accessibility, Trial ability, Compatibility and User Experience of Digital Services in Banking among the Categories of Employment of the Individuals.

	Null Hypothesis	Test	Sig.	Decision
1.	The opinion of the respondents for the construct Availability of Digital Technologies towards Digital Banking is the same across categories of Employment Status.	K-W Test	.000	Reject.
2.	The opinion of the respondents for the construct Accessibility of Digital Banking Technologies is the same across Employment Status groups.	K-W Test	.000	Reject.
3	The opinion of the respondents towards the construct Compatibility of Digital Banking Services is same across respondents' categories Employment Status groups.	K-W Test	.000	Reject.
4	The opinion of the respondents towards the construct Trialability of Digital Banking Technologies is the same across categories Employment Status groups.	K-W Test	.000	Reject.
5	The User Experience of the respondents towards Digital Banking services is the same across categories Employment Status groups.	K-W Test	.035	Reject.

5.5.5 $H_{01.5}$: There is no significant difference in Availability, Accessibility, Trial ability Compatibility and User Experience of Digital Services in Banking among the Rural and Urban Individuals.

	Null Hypothesis	Test	Sig.	Decision
1	The opinion of the respondents for the construct Availability of Digital Technologies towards Digital Banking is the same across categories of Rural and Urban area.	M-Whitney U Test	.058	Accept.
2	The opinion of the respondents for the construct Accessibility of Digital Banking Technologies is the same across the Rural and Urban area	M-Whitney U Test	.002	Reject.
3	The opinion of the respondents towards the construct Compatibility of Digital Banking Services is same across respondents' categories of Rural and Urban areas.	M-Whitney U Test	.542	Accept
4	The opinion of the respondents towards the construct Trialability of Digital Banking Technologies is the same across categories of Rural and Urban areas.	M-Whitney U Test	.582	Accept
5	The User Experience of the respondents towards Digital Banking services is the same across categories of Rural and Urban Areas.	M-Whitney U Test	.024	Reject

5.6. Part B: Exploratory Factor Analysis for testing of Perceptions of individuals on factors influencing adoption of Digital Technologies in Banking Sector.

5.6.1 Reliability Test:

Coefficient of Reliability	
Cronbach's Alpha	**N of Items**
.906	**43**

5.6.2 Conduct of KMO and Bartlett's Test for Factor Loading:

KMO and Bartlett's Test		
KMO test for Sampling Adequacy.		.960
Bartlett's Sphericity test	Chi-Square Value	21079.639
	df	903
	Sig.	.000

5.7 Factor loading using Rotated Component Method:

Factor Loading Matrix using Rotated Component Method													Cronbach's Alpha
	Component												
Scale Item	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	
PU1	.696												**0.898** *6 Items*
PU2	.683												
PU3	.681												
PU4	.644												
PU5	.632												
PU6	.609												
IUE1		.720											**0.902** *6 Items*
IUE2		.709											
IUE3		.691											
IUE4		.679											
IUE5		.672											
IUE6		.653											
BI1			.748										**0.856** *5 Items*
BI2			.607										
BI3			.592										
BI4			.570										
BI5			.460										
GT1				.806									**0.903** *3 Items*
GT2				.768									
GT3				.760									
TRU1					.722								

TRU2					.705								**0.871** *4 Items*
TRU3					.653								
TRU4					.601								
BK1						.721							**0.875** *3 Items*
BK2						.716							
BK3						.638							
SN1							.801						**0.835** *3 Items*
SN2							.776						
SN3							.674						
PEU1								.659					**0.906** *4 Items*
PEU2								.607					
PEU3								.526					
PEU4								.475					
RK1									.868				**0.762** *3Items*
RK2									.867				
RK3									.627				
AW1										.744			**0.855** *2 Items*
AW2										.667			
DBE1(ADU)											.750		**0.838** *2 Items*
DBE2(ADU)											.735		
INT1												.665	**0.705** *2 Items*
INT2												.451	

5.8 Testing of Hypothesis for Perceptions of individuals on factors influencing adoption of Digital Technologies in Banking Sector

5.8.1 $H_{02.1}$: There is no significant difference in Perception of the Individuals in adoption of Digital products among the Categories of Gender.

	Null Hypothesis	Test	Sig.	Decision
1	The perceptions of the respondents for the construct Perceived Usefulness about Digital Banking Technologies are the same across categories of Gender.	Independent-Samples M-Whitney U Test	.045	Reject
2	The perceptions of the respondents for the construct Perceived Ease of Use about Digital Banking Technologies are the same across categories of Gender.	Independent-Samples M-Whitney U Test	.014	Reject.
3	The perceptions of the respondents for the construct Trust about the Digital Technologies in Banking to opt is the same across categories of Gender.	Independent-Samples M-Whitney U Test	.068	Accept.

4	The Attitude of the individuals towards Digital Banking Technologies is the same across categories of Gender.	Independent-Samples M-Whitney U Test	.248	Accept
5	The perceptions of the respondents for the construct Perceived Risk about Digital Banking Technologies are the same across categories of Gender.	Independent-Samples M-Whitney U Test	.455	Accept
6	The distribution of Actual System Usage about Digital Banking Technologies is the same across categories of Gender.	Independent-Samples M-Whitney U Test	.426	Accept
7	The Internet Usage Efficacy of the respondents towards Digital Banking Technologies is the same across categories of Gender.	Independent-Samples M-Whitney U Test	.024	Reject
8	The influence of Social Norms in adoption Digital Banking Technologies is the same across categories of Gender.	Independent-Samples M-Whitney U Test	.791	Accept
9	The opinion of the respondents towards the construct Bank Promotion of Digital Technologies is the same across categories of Gender.	Independent-Samples M-Whitney U Test	.000	Reject
10	The Awareness of the respondents about Digital Technologies in Banking is the same across categories of Gender.	Independent-Samples M-Whitney U Test	.311	Accept
11	The perception of the respondents towards the construct Govt Initiative to facilitate Digital Technologies related to Digital Banking is the same across categories of Gender.	Independent-Samples M-Whitney U Test	.843	Accept
12	The Behavioural Intention of individuals in opting Digital Technologies in Banking sector is the same across categories of Gender.	Independent-Samples M-Whitney U Test	.032	Reject.

5.8.2 $H_{02.2}$: There is no significant difference in Perception of the Individuals in adoption of Digital products among the Categories of Educational Qualifications of the Individuals.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of construct Perceived Usefulness about Digital Banking Technologies is the same across categories of Individual Educational Qualifications.	Independent-Samples K-W Test	.000	Reject the null hypothesis.
2	The distribution of Perceived Ease of Use about Digital Banking Technologies is the same across categories of Individual on the base of their Educational Qualifications.	Independent-Samples K-W Test	.000	Reject the null hypothesis.

3	The distribution of concept Trust on the Digital Technologies in Banking to opt is the same across categories of I Educational Qualifications.	Independent-Samples K-W Test	.001	Reject the null hypothesis.
4	The distribution of Attitude of the individuals about Digital Banking Technologies is the same across categories of Educational Qualifications.	Independent-Samples K-W Test	.000	Reject the null hypothesis.
5	The distribution of Perceived Risk about Digital Banking Technologies is the same across categories of Educational Qualifications.	Independent-Samples K-W Test	.004	Reject the null hypothesis.
6	The distribution of Actual System Usage about Digital Banking Technologies is the same across categories of Educational Qualifications.	Independent-Samples K-W Test	.000	Reject the null hypothesis.
7	The distribution of Internet Usage Efficacy about Digital Banking Technologies is the same across categories of Educational Qualifications.	Independent-Samples K-W Test	.000	Reject the null hypothesis.
8	The distribution of Social Norms affecting adoption of about Digital Banking Technologies is the same across categories of Educational Qualifications.	Independent-Samples K-W Test	.001	Reject the null hypothesis.
9	The distribution of Bank Promotion of Digital Technologies is the same across categories of Educational Qualifications.	Independent-Samples K-W Test	.007	Reject the null hypothesis.
10	The distribution of Awareness about Digital Technologies about Digital Banking is the same across categories of Educational Qualifications.	Independent-Samples K-W Test	.060	Accept the null hypothesis.
11	The distribution of Govt.Initiative to facilitate Digital Technologies related to Digital Banking is the same across categories of Educational Qualifications.	Independent-Samples K-W Test	.000	Reject the null hypothesis.
12	The distribution of Behavioural Intention of individuals in opting Digital Technologies in Banking sector is the same across categories of Educational Qualifications.	Independent-Samples K-W Test	.000	Reject the null hypothesis.

5.8.3 $H_{02.3}$: There is no significant difference in Perception of the Individuals in adoption of Digital products among the Categories of Age Groups of the Respondents.

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig.	Decision
1	The Perception of the Individuals on construct Perceived Usefulness about the Digital Technologies in Banking is the same across categories of Age groups of the Individuals.	K-W Test	.000	Reject.
2	The Perception of the Individuals on construct Perceived Ese of Use of Digital Technologies in Banking Sector is the same across categories of Age.	K-W Test	.001	Reject
3	The Perception of the Individuals on construct Trust towards Digital Banking Services is the same across categories of Age.	K-W Test	.001	Reject
4	The Individuals Attitude towards Digital Banking is the same across categories of Age Groups.	K-W Test	.005	Reject.
5	The Perceived Risk about the Digital Technologies in Banking to adopt is same across categories of Age Groups of the Individuals.	K-W Test	.116	Accept
6	The Actual System Usage of Digital Technologies is the same across categories of Individual Age Groups.	K-W Test	.010	Reject
7	The distribution of Internet Usage Efficacy of the Individuals is the same across categories of Age Groups.	K-W Test	.003	Reject.
8	The Influence of Social Norms to adopt Digital Technologies in Banking Sector is the same across categories of Age Groups.	K-W Test	.017	Reject.
9	The perception of the Individuals on the Role of Bank Promotion towards Digital Technologies is the same across categories of Age Groups.	K-W Test	.001	Reject
10	The Concept of Awareness about the Digital Banking Technologies is the same across categories of Age Groups.	K-W Test	.034	Reject.
11	The perception of the Individuals on Govt. Initiative to promote Digital Banking Technologies is the same across Age Groups of the Respondents.	K-W Test	.001	Reject
12	The Behavioural Intention of the respondents in adopting Digital Technologies in Banking is the same across categories of Age Groups.	K-W Test	.002	Reject

5.8.4 $H_{02.4}$: There is no significant difference in Perception of the Individuals in adoption of Digital products among the Categories of Respondents Employment Status.

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig	Decision
1	The Perception of the Individuals on construct Perceived Usefulness about the Digital Technologies in Banking is the same across categories of Employment Status of the Individuals.	K-W Test	.000	Reject.
2	The Perception of the Individuals on construct Perceived Ese of Use of Digital Technologies in Banking Sector is the same across categories of Employment Status.	K-W Test	.000	Reject
3	The Perception of the Individuals on construct Trust towards Digital Banking Services is the same across categories of Employment Status.	K-W Test	.008	Reject.
4	The Individuals Attitude towards Digital Banking is the same across categories of Employment Status.	K-W Test	.001	Reject
5	The Perceived Risk about the Digital Technologies in Banking to adopt is same across categories of Employment Status. Groups of the Individuals.	K-W Test	.065	Accept
6	The Actual System Usage of Digital Technologies is the same across categories of Individual Employment Status Groups.	K-W Test	.000	Reject
7	The distribution of Internet Usage Efficacy of the Individuals is the same across categories of Employment Status. Groups.	K-W Test	.000	Reject
8	The Influence of Social Norms to adopt Digital Technologies in Banking Sector is the same across categories of Employment Status. Groups.	K-W Test	.000	Reject
9	The perception of the Individuals on the Role of Bank Promotion towards Digital Technologies is the same across categories of Employment Status. Groups.	K-W Test	.000	Reject
10	The Concept of Awareness about the Digital Banking Technologies is the same across categories of Employment Status. Groups.	K-W Test	.000	Reject
11	The perception of the Individuals on Govt. Initiative to promote Digital Banking Technologies is the same across Employment Status. Groups of the Respondents.	K-W Test	.001	Reject
12	The Behavioural Intention of the respondents in adopting Digital Technologies in Banking is the same across categories of Employment Status Groups.	K-W Test	.000	Reject

5.8.5 $H_{02.5}$: There is no significant difference in Perception of the Individuals in adoption of Digital products among the Categories of Respondents belong to Rural and Urban Regions.

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig	Decision
1	The perception of the respondents on construct Perceived Usefulness about the Digital Banking Technologies is the same across categories of Rural and Urban Respondents.	M-Whitney U Test	.207	Accept
2	The perception of the respondents on Perceived Ese of Use about Digital Banking Technologies is the same across categories of Rural and Urban respondents.	M-Whitney U Test	.978	Accept
3	The Respondents opinion about the construct Trust about the Digital Banking Technologies is the same across categories of Rural and Urban respondents.	M-Whitney U Test	.009	Reject
4	The respondents Attitude towards Digital Technologies of Banking Sector is the same across categories of Rural and Urban respondents.	M-Whitney U Test	.330	Accept
5	The perception of the respondents on the construct Risk about usage of Digital Technologies in banking Sector is same across categories of Rural and Urban Respondents.	M-Whitney U Test	.952	Accept
6	The Actual System Usage of the respondents is the same across categories of Rural and Urban.	M-Whitney U Test	.149	Accept
7	The Internet Usage Efficacy of the Respondents is the same across categories of Rural and Urban individuals.	M-Whitney U Test	.115	Accept
8	The influence of Social Norms on opting Digital Technologies in Banking is the same across categories of Rural and Urban respondents.	M-Whitney U Test	.421	Accept
9	The perceptions of the respondents about Bank Promotion on Digital Banking Technologies are the same across categories of Rural and Urban Individuals.	M-Whitney U Test	.423	Accept
10	The Awareness of the Respondents about Digital Banking Technologies is the same across categories of Rural and Urban	M-Whitney U Test	.798	Accept
11	The opinion of the respondents on Govt Initiative in promoting Digital Banking Technologies is the same across categories of Rural and Urban.	M-Whitney U Test	.003	Reject
12	The Behavioural Intention of the Respondents about Digital banking Technologies is the same across categories of Rural and Urban.	M-Whitney U Test	.514	Accept

PART:C

5.9 ANALYSIS OF TECHNOLOGY ACCEPTANCE MODEL USING STRUCTURAL EQUATION MODEL FOR DIGITAL BANKING

5.9.1 Composite Reliability

CONSTRUCT	CR
Perceived Usefulness	0.900
Perceived Ease of Use	0.895
Accessibility	0.834
Behavioural Intention	0.836
Risk	0.823
Compatibility	0.894
Trialability	0.831
Availability	0.712
Trust	0.881
Internet Usage Efficacy	0.905
Social Norms	0.849
Govt. Initiatives	0.913
Bank Promotion	0.875
Actual Digital Usage	0.851
Awareness	0.861

5.9.2 Convergent Validity

CONSTRUCT	AVE
Perceived Usefulness	0.600
Perceived Ease of Use	0.681
Accessibility	0.558
Behavioural Intention	0.562
Risk	0.699
Compatibility	0.585
Trialability	0.552
Availability	0.553
Trust	0.653
Internet Usage Efficacy	0.615
Social Norms	0.653
Govt. Initiatives	0.779
Bank Promotion	0.700
Actual Digital Usage	0.741
Awareness	0.756

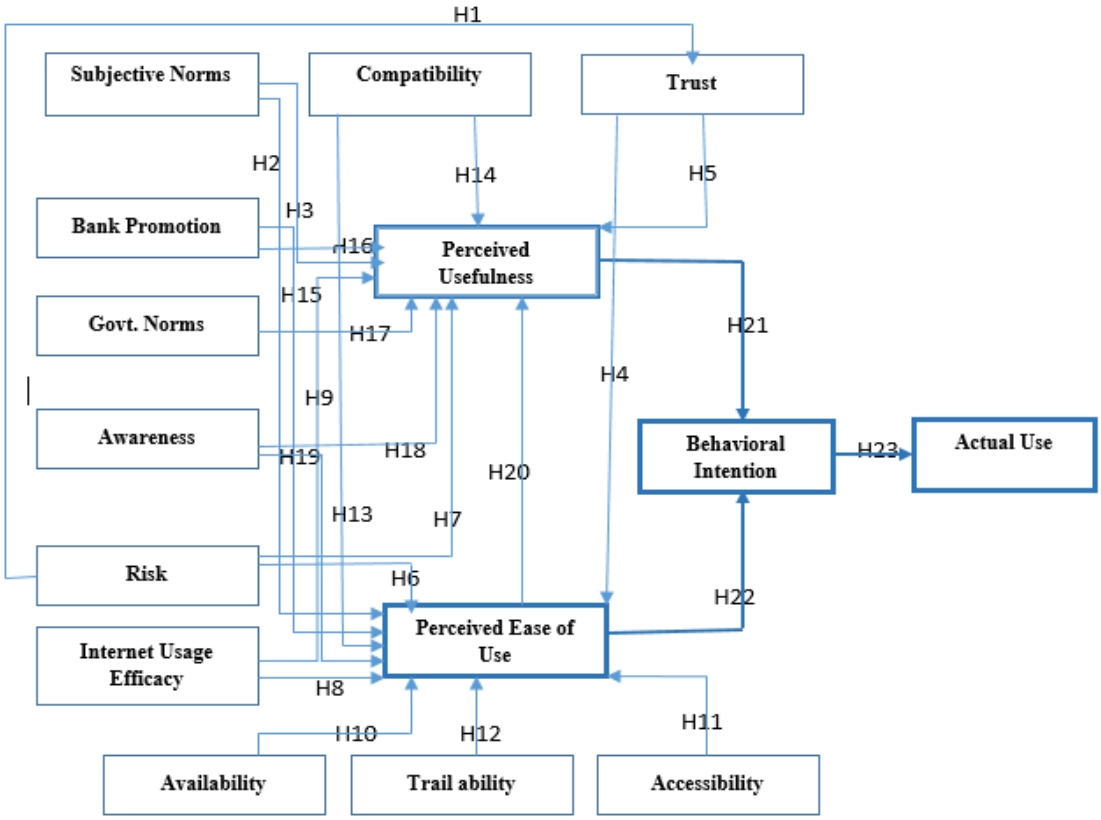
5.9.3 Discriminate validity:

	PU	PEU	ACC	BI	RSK	COMP	TRL	AVAI	TRU	IUE	SN	GI	BP	ADU	AWR
PU	**0.775**														
PEU	0.679	**0.825**													
ACC	0.674	0.722	**0.747**												
BI	0.678	0.739	0.712	**0.749**											
RSK	0.132	0.167	0.163	0.213	**0.836**										
COM	0.701	0.703	0.704	0.702	0.094	**0.765**									
TRL	0.662	0.662	0.676	0.722	0.310	0.699	**0.743**								
AVAI	0.695	0.686	0.715	0.665	0.244	0.735	0.638	**0.743**							
TRU	0.726	0.779	0.680	0.655	0.000	0.713	0.529	0.581	**0.808**						
IUE	0.763	0.799	0.687	0.702	0.184	0.772	0.644	0.635	0.711	**0.785**					
SN	0.572	0.593	0.563	0.579	0.239	0.567	0.521	0.469	0.524	0.595	**0.808**				
GI	0.586	0.665	0.556	0.562	0.210	0.584	0.524	0.526	0.619	0.615	0.631	**0.882**			
BP	0.741	0.803	0.625	0.742	0.216	0.758	0.606	0.577	0.646	0.679	0.561	0.626	**0.837**		
ADU	0.658	0.697	0.619	0.689	0.113	0.692	0.614	0.581	0.604	0.658	0.492	0.530	0.623	**0.861**	
AWR	0.635	0.714	0.591	0.686	0.169	0.652	0.584	0.545	0.639	0.623	0.536	0.585	0.679	0.602	**0.870**

5.10 Model fit indices for the Measurement and Structural Model:

Statistic	Measurement Model	Revised Structural Model	Recommended value	Reference
χ^2	4753.010	3635.125	……..	
df	1627	1319	…….	
P	0.000	0.00	>.05 (for sample size greater than 400 it will almost significant)	Baggozzi&Yi,1988
χ^2**/df**	2.921,	2.756	<5	Bentler,1989
RMSEA	0.054	0.051	<0.07	Hu and Bentler,1999
IFI	0.894	0.914	>0.9	Bollen,1990
CFI	0.893	0.914	>0.9	Bentler,1992
TLI	0.880	0.903	>0.9	Sharma et al.,2005
GFI	0.802	0.898	>0.90	Hair et al., 2010
AGFI	0.770	0.880	>0.80	Gefen et al.,2003

5.11 Extended TAM Model for the Analysis:



5.12 The Standard Regression weights calculated for the variables to test relation using E-TAM Model.

Path analysis relation			Estimate	S.E.	C.R.	P-Value	Decision
TRU	<---	RK	.043	.052	.818	.413	Not Supported
PEU	<---	SN	.018	.018	1.000	.317	Not Supported
PU	<---	SN	.048	.021	2.280	.023	Supported
PEU	<---	TRU	.202	.026	7.662	***	Supported
PU	<---	TRU	.121	.033	3.701	***	Supported
PEU	<---	RK	.063	.028	2.285	.022	Supported
PU	<---	RK	.015	.032	.452	.651	Not Supported
PEU	<---	IUE	.138	.021	6.684	***	Supported
PU	<---	IUE	.109	.026	4.192	***	Supported
PEU	<---	AVL	-.001	.022	-.068	.946	Not Supported
PEU	<---	ACC	.101	.020	5.116	***	Supported
PEU	<---	TRL	.012	.026	.464	.643	Not Supported
PEU	<---	COM	.379	.030	12.791	***	Supported
PU	<---	COM	.412	.046	8.951	***	Supported
PEU	<---	BKP	.154	.019	7.940	***	Supported
PU	<---	BKP	.083	.025	3.343	***	Supported
PU	<---	GVT.P	.002	.018	.122	.903	Not Supported
PEU	<---	AWR	.113	.020	5.590	***	Supported
PU	<---	AWR	-.024	.024	-.972	.331	Not Supported
PU	<---	PEU	.298	.084	3.565	***	Supported
BI	<---	PU	.215	.061	3.541	***	Supported
BI	<---	PEU	.656	.083	7.871	***	Supported
ADU	<---	BI	.916	.082	11.242	***	Supported

5a. ANALYSIS OF DATA FOR DIGITALISATION OF AGRICULTURE SECTOR.

5a.1 Demographic Profile of the Respondents under the Study for Technology Adoption in Agriculture Sector.

Respondents Profile for the Study Related to Technology Adoption in Agriculture					
		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	**Male**	644	79.4	79.4	79.4
	Female	167	20.6	20.6	100.0
Educational Qualifications	**Illiterate**	269	33.2	33.2	33.2
	Primary School	162	20.0	20.0	53.1
	Secondary School	153	18.9	18.9	72.0
	Intermediate	107	13.2	13.2	85.2
	Degree	87	10.7	10.7	95.9
	PG and above	33	4.1	4.1	100.0
Age Profile	**Under 20Years**	19	2.3	2.3	2.3
	21-30 Years	131	16.2	16.2	18.5
	31-40 Years	258	31.8	31.8	50.3
	41-50 Years	263	32.4	32.4	82.7
	51-60 Years	112	13.8	13.8	96.5
	61 & above	28	3.5	3.5	100.0
Marital Status	**Married**	724	89.3	89.3	89.3
	Unmarried	87	10.7	10.7	100.0
	Total	811	100.0	100.0	
Income Levels	**Less than 100000**	189	23.3	23.3	23.3
	100001 to 150000	340	41.9	41.9	65.2
	150001 to 200000	204	25.2	25.2	90.4
	Above 200001	78	9.6	9.6	100.0
Place of Residence	**Rural**	731	90.1	90.1	90.1
	Urban	80	9.9	9.9	100.0
Size of Land Holding	**Less than 5 Acres**	542	66.8	66.8	66.8
	5 to 10 Acres	220	27.1	27.1	94.0
	Above 10Acres	49	6.0	6.0	100.0
	Total	811	100.0	100.0	
Table:					

5a.2 Usage of Digital Technologies by the farmers in Agriculture.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	304	37.5	37.5	37.5
	No	507	62.5	62.5	100.0
	Total	811	100.0	100.0	
Table:					

5a.3 Availability of Digital Infrastructure like Personal Computers/Laptops, Smart Phones and Internet connectivity.

Item Particulars		Frequency	Percent	Valid Percent	Cumulative Percent
Use of Personal Computer/Laptops by the Respondents	Yes	67	8.3	8.3	8.3
	No	744	91.7	91.7	100.0
Computer/Laptop having internet Connection.	Yes	65	8.0	8.0	8.0
	No	746	92.0	92.0	100.0
Usage of Normal Phones	Yes	694	85.6	85.6	85.6
	No	117	14.4	14.4	100.0
Usage of Smart Phones	Yes	472	58.2	58.2	58.2
	No	339	41.8	41.8	100.0
Smart Phone Users with Internet	Yes	434	53.5	53.5	53.5
	No	377	46.5	46.5	100.0
Table:					

5a.4 Opinion of the Respondents as major source of creating Awareness about Digital Technologies among the farmers.

Item Particulars	Responses	Percentage
Family Members/Friends/Relations	545	67.2
Govt. Training Awareness Programs	294	36.3
Media Like TV/Radio/News Papers	574	70.8
Private Dealers and input Subsidiaries/Salesmen	270	33.3
Through Internet Source	308	38.0

5a.5 Opinion of the respondents on hindering factor for Digital Penetration in Agriculture sector (Respondents can give more than one option)

Item Particulars	Number of Responses	Sum of Percentage
Accessibility to Digital Technologies	181	22.32
Challenges in Use of Digital Technologies in Agriculture	146	18.00
Cost incurred in Digital Technologies	160	19.73
Fear of Using Digital Technologies and safety/other issues	210	25.89
I don't Know much about Digital Technologies in the Field of Agriculture	368	45.38

5a.6 Exploratory Factor Analysis for testing of Present level of Digital Technologies Acceptance in Agricultural Sector.

5a.6.1 Reliability Test:

Coefficient of Reliability	
Cronbach's Alpha	**Number of Items considered**
.833	26

5a.6.2 Conduct of KMO and Bartlett's Test for Factor Loading:

KMO and Bartlett's Test		
KMO test for Sampling Adequacy.		.896
Bartlett's Sphericity test	Chi-Square Value	20264.739
	df	903
	Sig.	.000

5a.7 Factor Loadings:

Rotated Component Method									**Cronbach's Alpha**
	Component								
	1	2	3	4	5	6	7	8	
PEU1	.808								**0.683** *3 Items*
PEU2	.733								
PEU3	.707								
TR1		.568							
AC1			.695						**0.700** *4 Items*
AC2			.611						
AC3			.437						
AC4			.425						
COM1				.853					**0.746** *5 Items*
COM2				.691					
COM3				.623					
COM4				.510					
COM5				.497					
PU1					.754				**0.827** *4 Items*
PU2					.712				
PU3					.685				
PU4					.659				
SN1						.848			**0.785** *2 Items*
SN2						.827			
IUE1							.894		**0.894** *3 Items*
IUE2							.888		
IUE3							.806		
AT1								.658	**0.779** *3 Items*
AT2								.629	
AT3								.575	

5a.8 TESTING OF HYPOTHESES FOR THE OPINION OF THE RESPONDENTS:

5a.8.1 $H_{01.1}$: There is no significant difference in Trialability, Accessibility and Compatibility of Digital Services in Agriculture Sector among the Gender Categories.

Hypothesis Test Summary				
	Null Hypothesis	**Test**	**Sig.**	**Decision**
1	The opinion of the respondents related to the construct Trialability of Digital Technologies in Agriculture is the same across categories of Gender Groups.	Independent-Samples M-W U Test	.015	Reject.
2	The opinion of the respondents on Accessibility of Digital Technologies in Agriculture is the same across categories of Gender.	Independent-Samples M-W U Test	.125	Retain
3	The opinion of the Respondents on the construct Compatibility of Digital Technologies in agriculture is the same across categories of Gender Groups.	Independent-Samples M-W U Test	.011	Reject

5a.8.2 $H_{01.2}$: There is no significant difference in Trialability, Accessibility and Compatibility of Digital Services in Agriculture Sector among the Respondents Educational Qualification.

Hypothesis Test Summary				
	Null Hypothesis	**Test**	**Sig.**	**Decision**
1	The opinion of the respondents related to the construct Trialability of Digital Technologies in Agriculture is the same across categories of Respondents Educational Qualification.	Independent-Samples K-W Test	<.001	Reject.
2	The opinion of the respondents on Accessibility of Digital Technologies in Agriculture is the same across categories Respondents Educational Qualification.	Independent-Samples K-W Test	<.001	Reject
3	The opinion of the Respondents on the construct Compatibility of Digital Technologies in agriculture is the same across categories of Respondents Educational Qualification.	Independent-Samples K-W Test	<.001	Reject.

5a.8.3 $H_{01.3}$: There is no significant difference in Trialability, Accessibility and Compatibility of Digital Services in Agriculture Sector among the Respondents Age Groups.

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig.	Decision
1	The opinion of the respondents related to the construct Trialability of Digital Technologies in Agriculture is the same across categories of Age Groups.	Independent-Samples K-W Test	<.001	Reject
2	The opinion of the respondents on Accessibility of Digital Technologies in Agriculture is the same across categories Age Groups.	Independent-Samples K-W Test	.001	Reject
3	The opinion of the Respondents on the construct Compatibility of Digital Technologies in agriculture is the same across categories of Respondents Age Groups.	Independent-Samples K-W Test	<.001	Reject

5a.8.4 H01.4: There is no significant difference in Trialability, Accessibility and Compatibility of Digital Services in Agriculture Sector among the Respondents Income categories.

Hypothesis Test Summary				
	Null Hypothesis	**Test**	**Sig.**	**Decision**
1	The opinion of the respondents related to the construct Trialability of Digital Technologies in Agriculture is the same across categories of Income levels.	Independent-Samples K-W Test	<.001	Reject
2	The opinion of the respondents on Accessibility of Digital Technologies in Agriculture is the same across categories Income levels.	Independent-Samples K-W Test	.069	Retain
3	The opinion of the Respondents on the construct Compatibility of Digital Technologies in agriculture is the same across categories of Respondents Income levels.	Independent-Samples K-W Test	<.001	Reject

5a.8.5 $H_{01.5}$: There is no significant difference in Trialability, Accessibility and Compatibility of Digital Services in Agriculture Sector across categories of Size of Land Holding.

Hypothesis Test Summary				
	Null Hypothesis	**Test**	**Sig.**	**Decision**
1	The opinion of the respondents related to the construct Trialability of Digital Technologies in Agriculture is the same across categories of Size of Land Holding.	Independent-Samples K-W Test	.021	Reject
2	The opinion of the respondents on Accessibility of Digital Technologies in Agriculture is the same across categories Size of Land Holding.	Independent-Samples K-W Test	.002	Reject
3	The opinion of the Respondents on the construct Compatibility of Digital Technologies in agriculture is the same across categories of Respondents Size of Land Holding.	Independent-Samples K-W Test	.001	Reject

5a.8.6 $H_{01.6}$ There is no significant difference in Trialability, Accessibility and Compatibility of Digital Services in Agriculture Sector across categories Rural and Urban Farmers.

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig.[a,b]	Decision
1	The opinion of the respondents related to the construct Trialability of Digital Technologies in Agriculture is the same across categories of Rural and Urban areas.	Independent-Samples M-W U Test	.432	Retain .
2	The opinion of the respondents on Accessibility of Digital Technologies in Agriculture is the same across categories of Rural and Urban areas.	Independent-Samples M-W U Test	.510	Retain
3	The opinion of the Respondents on the construct Compatibility of Digital Technologies in agriculture is the same across categories of Rural and Urban areas.	Independent-Samples M-W U Test	.288	Retain

***TESTING THE PERCEPTIONS OF THE RESPODENTS TOWRDS FACTORS INFLUENCING ADOPTION OF DIGITAL TECHNOLOGIES IN AGRICULTURE SECTOR.**

5a.8.7 $H_{02.1}$: There is no significant difference in Perception of the Individuals in adoption of Digital Technologies in Agriculture among the Categories of Gender.

	Null Hypothesis	Test	Sig.[a,b]	Decision
1	The perception of the respondents for the construct Perceived ease of Use in Utilising Digital Technologies in Agriculture Sector is the same across categories of Gender Groups Male and Female.	Independent-Samples M-W U Test	<.001	Reject
2	The Opinion of the Respondents on the construct Perceived usefulness of Digital Technologies pertaining to Agriculture is the same across categories of Gender.	Independent-Samples M-W U Test	.002	Reject
3	The influence of social norms on respondents in adopting Digital Technologies in Agriculture is the same across categories of Gender.	Independent-Samples M-W U Test	.023	Reject .
4	The Internet usage efficacy of the Respondents is the same across categories of Gender.	Independent-Samples M-W U Test	<.001	Reject
5	The respondents Attitude towards Digital Technologies in Agriculture Sector is the same across categories of Gender Groups.	Independent-Samples M-W U Test	<.001	Reject

5a.8.8 $H_{02.2}$: There is no significant difference in Perception of the Individuals in adoption of Digital Technologies in Agriculture among the Respondents Educational Qualification.

	Null Hypothesis	Test	Sig.[a,b]	Decision
1	The perception of the respondents for the construct Perceived ease of Use in Utilising Digital Technologies in Agriculture Sector is the same across categories of Respondents Educational Qualification.	Independent-Samples K-W Test	.000	Reject
2	The Opinion of the Respondents on the construct Perceived usefulness of Digital Technologies pertaining to Agriculture is the same across categories of Respondents Educational Qualification.	Independent-Samples K-W Test	<.001	Reject

3	The influence of social norms on respondents in adopting Digital Technologies in Agriculture is the same across categories of Respondents Educational Qualification.	Independent-Samples K-W Test	.005	Reject.
4	The Internet usage efficacy of the Respondents is the same across categories of Respondents Educational Qualification.	Independent-Samples K-W Test	.000	Reject
5	The respondents Attitude towards Digital Technologies in Agriculture Sector is the same across categories of Respondents Educational Qualification.	Independent-Samples K-W Test	<.001	Reject

5a.8.9 $H_{02.3}$: There is no significant difference in Perception of the Individuals in adoption of Digital Technologies in Agriculture among the Respondents Age groups.

	Null Hypothesis	Test	Sig.[a,b]	Decision
1	The perception of the respondents for the construct Perceived ease of Use in Utilising Digital Technologies in Agriculture Sector is the same across categories of Respondents Age.	Independent-Samples K-W Test	<.001	Reject
2	The Opinion of the Respondents on the construct Perceived usefulness of Digital Technologies pertaining to Agriculture is the same across categories of Respondents Age Groups.	Independent-Samples K-W Test	<.001	Reject
3	The influence of Social norms on respondents in adopting Digital Technologies in Agriculture is the same across categories of Respondents Age Groups.	Independent-Samples K-W Test	<.001	Reject.
4	The Internet usage efficacy of the Respondents is the same across categories of Respondents Age Groups.	Independent-Samples K-W Test	.000	Reject.
5	The respondents Attitude towards Digital Technologies in Agriculture Sector is the same across categories of Respondents Age Groups.	Independent-Samples K-W Test	<.001	Reject

5a.8.10 $H_{02.4}$: There is no significant difference in Perception of the Individuals in adoption of Digital Technologies in Agriculture among the Respondents Income Levels.

	Null Hypothesis	Test	Sig.[a,b]	Decision
1	The perception of the respondents for the construct Perceived ease of Use in Utilising Digital Technologies in Agriculture Sector is the same across categories of Respondents Income levels.	Independent-Samples K-W Test	.037	Reject
2	The Opinion of the Respondents on the construct Perceived usefulness of Digital Technologies pertaining to Agriculture is the same across categories of Respondents Income levels.	Independent-Samples K-W Test	.003	Reject
3	The influence of Social norms on respondents in adopting Digital Technologies in Agriculture is the same across categories of Respondents Income levels.	Independent-Samples K-W Test	.130	Retain
4	The Internet usage efficacy of the Respondents is the same across categories of Respondents Income levels.	Independent-Samples K-W Test	.089	Retain
5	The respondents Attitude towards Digital Technologies in Agriculture Sector is the same across categories of Respondents Income levels.	Independent-Samples K-W Test	<.001	Reject

5a.8.11 $H_{02.5}$: There is no significant difference in Perception of the Individuals in adoption of Digital Technologies in Agriculture among the Respondents Size of Land Holdings.

	Null Hypothesis	Test	Sig.	Decision
1	The perception of the respondents for the construct Perceived ease of Use in Utilising Digital Technologies in Agriculture Sector is the same across categories of Respondents Size of Land Holding.	Independent-Samples K-W Test	.002	Reject

2	The Opinion of the Respondents on the construct Perceived usefulness of Digital Technologies pertaining to Agriculture is the same across categories of Respondents Size of Land Holding.	Independent-Samples K-W Test	.004	Reject.
3	The influence of Social norms on respondents in adopting Digital Technologies in Agriculture is the same across categories of Respondents Size of Land Holding.	Independent-Samples K-W Test	.017	Reject
4	The Internet usage efficacy of the Respondents is the same across categories of Respondents Size of Land Holding.	Independent-Samples K-W Test	.093	Retain
5	The respondents Attitude towards Digital Technologies in Agriculture Sector is the same across categories of Respondents Size of Land Holding.	Independent-Samples K-W Test	<.001	Reject.

5a.8.12 $H_{02.6:}$ There is no significant difference in Perception of the Individuals in adoption of Digital Technologies in Agriculture among the Rural and Urban respondents.

	Null Hypothesis	Test	Sig.	Decision
1	The perception of the respondents for the construct Perceived ease of Use in Utilising Digital Technologies in Agriculture Sector is the same across categories of Rural and Urban areas.	Independent-Samples M-W U Test	.412	Retain
2	The Opinion of the Respondents on the construct Perceived usefulness of Digital Technologies pertaining to Agriculture is the same across categories of Rural and Urban areas.	Independent-Samples M-W U Test	.009	Reject.
3	The influence of Social norms on respondents in adopting Digital Technologies in Agriculture is the same across categories of Rural and Urban areas.	Independent-Samples M-W U Test	.425	Retain
4	The Internet usage efficacy of the Respondents is the same across categories of Rural and Urban areas.	Independent-Samples M-W U Test	.003	Reject
5	The respondents Attitude towards Digital Technologies in Agriculture Sector is the same across categories of Rural and Urban areas.	Independent-Samples M-W U Test	.954	Retain

6. Findings and Conclusions: -

6.1 Banking (Fintech): -

- The total number of respondents count for 686, from whom the primary data is collected by administering the questionnaire.

- Among the total respondents 461 are Male and 225 respondents are Female with 67.2% and 32.8% respectively.

- The study reveals that "When asked the opinion of the Respondents regarding the Essentiality of the Digital Banking Technologies in Banking Sector, 42% expressed that Digital Technologies are Essential, 17% said Vital, 23% said Desirable and 23% of them said they cannot Exactly.

- When explored the kind of New financial innovations and Technologies the respondents are embracing in Banking sector, the Majority of the Respondents with 79% have opined that they are using Digital Wallets. Which are of new inclusions as on Date in Financial transactions in Banking.

- When studied perceptions of the Individuals with regard to factors influencing adoption of Digital Technologies in Banking sectors there is no difference for the constructs- Trust, Attitude, Risk, Actual System Usage, Social Norms, Awareness and Govt. Initiatives. For the constructs PU, PEU, Internet Usage Efficacy, Bank Promotion and behavioural intention there is significant difference.

- Education wise the respondent's perceptions varies for all the factors except for Awareness factor.

- Age wise when studies perceptions of the respondents, the perceptions vary for all the constructs (PU, PEU, Trust, Attitude, Actual System Usage, Internet Usage Efficacy, Social Norms, Bank Promotion, Awareness, Govt. initiatives and Behavioural Intention). Whereas, the construct Risk remains same across the Age Groups.

- when studies perceptions of the respondents based on Employment Status, the perceptions vary for all the constructs (PU, PEU, Trust, Attitude, Actual System Usage, Internet Usage Efficacy, Social Norms, Bank Promotion, Awareness, Govt. initiatives and Behavioural Intention). Whereas, the construct Risk remains same across the Employment Groups.

- When studied Rural and Urban groups it is found that there is no difference in the perceptions of the Individuals towards the factors influencing Digital Technologies in Banking except for the constructs Trust and Govt. initiatives.

- The study also conducted factors influence each other on behavioural intention in accepting the Digital Technologies. The core Model of TAM that is PU and PEU has positive Influence on Behavioural Intention of the Individual which results in Actual System Usage in Banking Sector.

- Whereas factors Risk on Trust, Availability, Trialability and Social Norms on PEU, Govt.Promotion, Awareness and Social Norms on PU have no positive Influence in accepting the Digital Technologies in Banking Sector.

6.2 Agriculture Sector: -

- The study found that total of 811 respondents, 79.4% majority are male. Only 20.6% are female.

- Analysing the infrastructure available, the majority with 85% have normal Phones, 58.2% have smart phones and of which 53.5% have Internet facility. Usage of Computer, laptops are insignificant in terms of Digital Infrastructure in Agriculture Sector.

- When asked the respondents about know usage of Digital Technologies 62.5% said they dot know.

- When asked what sources they expect as source of creating awareness majority opined that social media and Family, Friends/relations would be better source of creating Digital Awareness.

- the respondents' opinion regarding, the factors that hinders them to opt technologies in agriculture related activities. 34% said that they don't have much awareness related to the digital Technologies. 20% of the respondents have opinion that fear of using Technologies and safety and other issues, 17% said lack of accessibly to technologies, 15% opined cost incurrence and 14% said use of technology is a challenging factor in agriculture sector.

- The respondents have shown positive response when asked their intentions to use Technologies in Agriculture Sector. Respondents also expressed that use of Technologies in agriculture saves their time and gives possible solutions.

- However, it is found that there are difficulties in availability of Digital Infrastructure and Awareness about Technology Usage in Agriculture Sector.

- The Respondents also expressed that the Use of Technologies are difficult in agriculture. However, if someone helps them certainly, they will use the Technologies.

- Study also reveals that the existing Technologies in agriculture are insignificant and are not Location Specific to meet their current needs in farming.

6.3 Limitations of the Study:

The following are the some of the limitations the researcher has identified.

1. The Present Study is focused issue from macro perspective. There is need for Micro level approach to analyse the crucks of the issue when it comes to specific segments

of the Market and the kind of specific Digital Products and services in Banking Sector.

2. As the phenomena of Digitisation is in progressive phase, there may be a chance of eccentricity while articulating to the same to the researcher regarding the perceptions and understanding of the Digitisation.

3. Though the researcher has encompassed all the Segments of the population across the state to extract the information, there arises a difficult to reach some untapped potential sections that are to be categorised and are to be focused for the study.

4. There is a deviation when it comes to the Focal point of the study in agriculture Sector, where literature as well as the respondents are less exposed to the Digital Phenomena and lacks Understanding while conveying the same to the researcher.

5. The study is mainly oriented in understanding the opinion and perceptions of the respondents from Marketing point of view only.

6. The study has not covered impact of Covid pandemic and forces of Demonetization under the study.

6.4 Scope for Further Research:

- There is vast scope for research pertaining to Digitisation as it is an emerging phenomenon.
- The study also can be made at micro level approach by analysing Digital Technologies specific to the sector and to its purpose.
- Further the Individual applications related to specific purpose can be studied and can be compared with its competitors in their specific area of concern.

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